

CSCI 572 Homework 4: Indexing the Web Using Solr

Web pages that indexed ---- NBC_NEWS

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Step 1. Install Solr and run Solr in Standalone mode (Mac)

(1). Download Solr-7.2.0.

(2). Cause Solr has the server Netty with itself, so I just run it by command:

\$ bin/solr start, which stand for the standalone mode. And the port number is 8983.

Then, I can visit the Solr's UI by input <http://localhost:8983/solr> in the browser.

(3). Create a core which name myexample by using the command:

\$ bin/solr create -c myexample

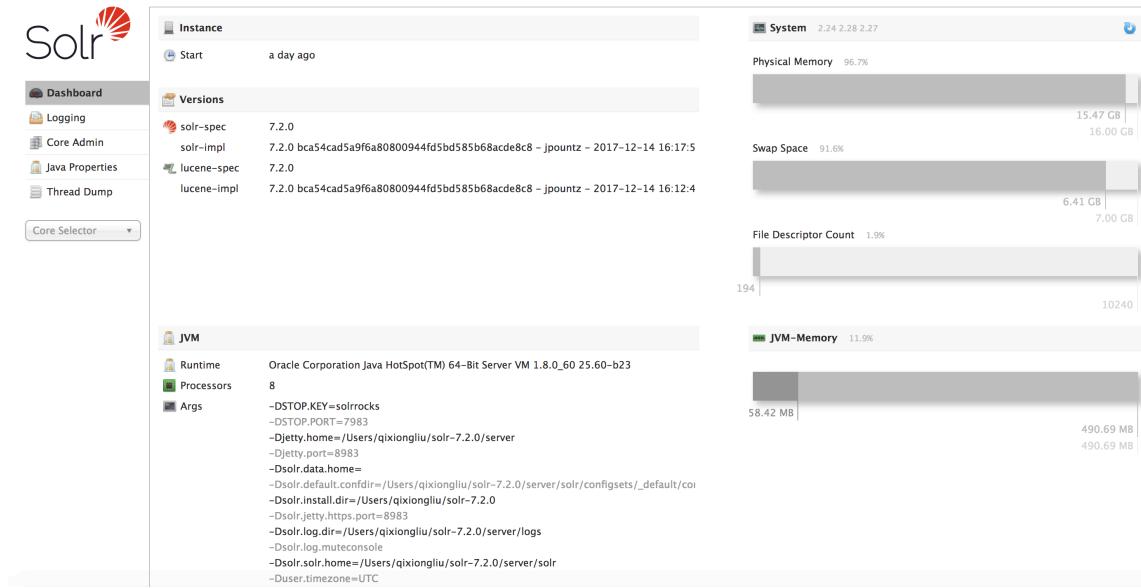


Figure 1. The main view of Solr.

Step 2. Indexing the web pages with TIKA

(1). Under the conf folder of the core myexample, edit the schema file, which name is "managed-schema".

```
<field name="id" type="string" indexed="true" stored="true" required="true" multiValued="false" />
<field name="_version_" type="long" indexed="true" stored="true"/>
<field name="_root_" type="string" indexed="true" stored="false"/>
<field name="_text_" type="text_general" indexed="true" stored="false" multiValued="true"/>
<copyField source="*" dest="_text_"/>
```

Figure 2. Set field content before indexing the web pages in "managed-schema".

(2). Index the web pages, by command:

\$ bin/post -c <core_name> -filetypes html <path_to_crawl_folder>/

for me, the command is:

```
$ bin/post -c myexample -filetypes html
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data
```

The screenshot shows the Solr UI dashboard for the 'myexample' core. On the left, there's a sidebar with links like Dashboard, Logging, Core Admin, Java Properties, Thread Dump, myexample (selected), Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query, Replication, Schema, Segments Info, and Help. The main area has three tabs: Statistics, Instance, and Healthcheck. The Statistics tab shows: Last Modified: 2 days ago, Num Docs: 15725, Max Doc: 15725, Heap Memory Usage: -1, Deleted Docs: 0, Version: 213, Segment Count: 13, Optimized: ✓, Current: ✓. The Instance tab shows: CWD: /Users/qixiongliu/solr-7.2.0/server, Instance: /Users/qixiongliu/solr-7.2.0/server/solr/myexample, Data: /Users/qixiongliu/solr-7.2.0/server/solr/myexample/data, Index: /Users/qixiongliu/solr-7.2.0/server/solr/myexample/data/index, Impl: org.apache.solr.core.NRTCachingDirectoryFactory. The Healthcheck tab says: Ping request handler is not configured with a healthcheck file. Below the tabs are links for Documentation, Issue Tracker, IRC Channel, Community forum, and Solr Query Syntax.

Figure 3. The output statistics in Solr UI after indexing the web pages. Here shows that the total of 15725 records in the Solr, though we have 15727 html files in total. That's because two of them encounter with error.

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 6,
    "params": {
      "q": "*:*",
      "_": "1523000420168"
    }
  },
  "response": {
    "numFound": 15725,
    "start": 0,
    "docs": [
      {
        "id": "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/0002a8c77b9dbcd5bf31fa9b235cba51.htm",
        "og_image": ["https://medial.s-nbcnews.com/j/news cms/2018_05/2316581/180204-calysta-feedkind-protein-se-850p_b5f3111056ek"],
        "og_image_width": [1200],
        "twitter_card": ["summary_large_image"],
        "stream_content_type": ["text/html"],
        "og_site_name": ["NBC News"],
        "description": ["Scientists at Penn State University developed a bioreactor that uses astronaut poop and pee to fuel the"],
        "og_image_type": ["image/jpeg"],
        "title": ["How recycled astronaut poop might sustain a mission to Mars"],
        "twitter_creator": ["NBCNews"],
        "og_description": ["How will we keep astronauts fed on deep-space missions?"],
        "og_image_secure_url": ["https://medial.s-nbcnews.com/j/news cms/2018_05/2316581/180204-calysta-feedkind-protein-se-850p_k"],
        "twitter_image": ["https://medial.s-nbcnews.com/j/news cms/2018_05/2316581/180204-calysta-feedkind-protein-se-850p_b5f3111056e"],
        "twitter_site": ["@NBCNews"],
        "dc_title": ["How recycled astronaut poop might sustain a mission to Mars"],
        "content_encoding": ["UTF-8"],
        "content_type": ["text/html; charset=UTF-8"],
        "stream_size": [121133],
        "x_parsed_by": ["org.apache.tika.parser.DefaultParser"],
        "org.apache.tika.parser.html.HtmlParser",
        "x_ua_compatible": ["ie=edge"],
        "og_type": ["article"],
        "twitter_title": ["How recycled astronaut poop might sustain a mission to Mars"],
        "thumbnail": ["https://medial.s-nbcnews.com/j/news cms/2018_05/2316581/180204-calysta-feedkind-protein-se-850p_b5f3111056e"]
      }
    ]
  }
}
```

Figure 4. Part of query result.

Step 3. Set up apache server, php environment, and solr-php-client

Because macbook already installed Apache server and php tools.

(1). Start service of Apache server by command: **sudo apachectl start**

(2). In order to control more convenient, I change the root directory to **/Users/qixiongliu/apacheServerRoot** from the default root directory **/Library/WebServer/Documents** by change edit file **httpd.conf**, which is located at **/etc/apache2/httpd.conf**

(3). Now we can see “It Works!” in the browser by input **http://localhost**

(4). Start service of PHP environment. Edit the **httpd.conf** file, find the line

LoadModule php5_module libexec/apache2/libphp5.so, delete the “#”. Then restart the Apache server by command: **sudo apachectl restart**

(5). Download solr-php-client, and unzip it, then put all the file in the root directory of Apache server.

Step 4. Use Jsoup to extract the links from web pages, and generate edges file, which name is edgesList.txt.

Use maven for managing the project, in the pom.xml:

```

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-in.
<modelVersion>4.0.0</modelVersion>
<groupId>cn.qixiong</groupId>
<artifactId>jsoup-extract</artifactId>
<version>0.0.1-SNAPSHOT</version>

<dependencies>
<dependency>
    <!-- jsoup HTML parser library @ https://jsoup.org/ -->
    <groupId>org.jsoup</groupId>
    <artifactId>jsoup</artifactId>
    <version>1.11.2</version>
</dependency>
</dependencies>
</project>

package cn.qixiongliu.tools;

import java.io.BufferedReader;

public class ExtractingLinks {
    public static void main(String[] args) throws Exception {
        String dirPath = "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/";
        String csvFilePath = "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/UrlToHtml_NBCNews.csv";

        Map<String, String> idUrlMap = new HashMap<String, String>();
        FileReader in = new FileReader(csvFilePath);
        BufferedReader br = new BufferedReader(in);
        String line = null;
        while ((line = br.readLine()) != null) {
            String id = line.split(",")[0];
            String url = line.split(",")[1];
            idUrlMap.put(url, id);
        }
        br.close();

        String outputFileName = "edgesList.txt";
        String outputPath = "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/Answer/" + outputFileName;
        PrintWriter pw = new PrintWriter(new FileWriter(outputPath));

        File directory = new File(dirPath);
        File[] htmlFiles = directory.listFiles();
        for (File file: htmlFiles) {
            File filePath = new File(dirPath + file.getName());
            Document doc = Jsoup.parse(filePath, "UTF-8", "https://www.nbcnews.com/");
            Elements links = doc.select("a[href]");

            for (Element link: links) {
                String outUrl = link.attr("abs:href").trim();
                if (idUrlMap.containsKey(outUrl)) {
                    String edge = file.getName() + " " + idUrlMap.get(outUrl);
                    pw.println(edge);
                    pw.flush();
                }
            }
        }
        pw.close();
    }
}

```

Figure 5. The code for generate the file edgesList.txt.

```

index.php x edgesList.txt x
1 0002a8c77b9dbc5bf31fa9b235cba51.html 582a22b26788b93835aab8770aa4a973.html
2 0002a8c77b9dbc5bf31fa9b235cba51.html faf498af542d8d80fd1c5ec424ebfd8.html
3 0002a8c77b9dbc5bf31fa9b235cba51.html 7ddcd69e6536262c84b942ac71c7651537.html
4 0002a8c77b9dbc5bf31fa9b235cba51.html 705d7c5aec4d4b526fc0a309438e80c4b.html
5 0002a8c77b9dbc5bf31fa9b235cba51.html 617b4c6c491eb7bf353a6cd0332dc58b.html
6 0002a8c77b9dbc5bf31fa9b235cba51.html 617b4c6c491eb7bf353a6cd0332dc58b.html
7 0002a8c77b9dbc5bf31fa9b235cba51.html 8c981b5a5e4e97a15c36ea377be9141a.html
8 0002a8c77b9dbc5bf31fa9b235cba51.html e1f1eb0a68746ed323355880872f6a71.html
9 0002a8c77b9dbc5bf31fa9b235cba51.html e1f1eb0a68746ed323355880872f6a71.html
10 0002a8c77b9dbc5bf31fa9b235cba51.html 77b86639d1384ac68141803ec5db27c0.html
11 0002a8c77b9dbc5bf31fa9b235cba51.html 944cd0bdb717bc12e19aaa0692c16fc.html
12 0002a8c77b9dbc5bf31fa9b235cba51.html af84a15c1896a903d3d3ea3eec33b1b1.html
13 0002a8c77b9dbc5bf31fa9b235cba51.html 6ca1edebe171b80d1f3e4e7829fe0f192.html
14 0002a8c77b9dbc5bf31fa9b235cba51.html f18e00ee7989fe188edac4d03c663e9.html
15 00057d673d1fec157969ffe02b348d65.html 77b86639d1384ac68141803ec5db27c0.html
16 00057d673d1fec157969ffe02b348d65.html c61bdc8e22de07759ee77db0f7627905.html
17 00057d673d1fec157969ffe02b348d65.html 4c6cbf47c24dc4b2a063c2586d7ea4f3.html
18 00057d673d1fec157969ffe02b348d65.html 5ce5a465bee4d1f6fbaeb7bda5edb07.html
19 00057d673d1fec157969ffe02b348d65.html 746dd81ffad27474cf5c514b8087f405.html
20 00057d673d1fec157969ffe02b348d65.html 97c038b2ce9ebc048fa7e31911b73f94.html
21 00057d673d1fec157969ffe02b348d65.html 36d3d20e5dc6ee6d35aa7fc00eb38655.html
22 00057d673d1fec157969ffe02b348d65.html 47f28bef06f585233946306ba535baa.html
23 00057d673d1fec157969ffe02b348d65.html 9e2e4924ea7f744bee83521bd5fb6911.html
24 00057d673d1fec157969ffe02b348d65.html c74d9a1aa8c112e26381d5a6988a355.html
25 00057d673d1fec157969ffe02b348d65.html 526e34baa0856a7074d1d43105adb2d1.html
26 00057d673d1fec157969ffe02b348d65.html 87e17622127da53e54c1d30ed8698d0c.html
27 00057d673d1fec157969ffe02b348d65.html 3871ecf889e1e0ae68fe8371d3ed77.html
28 00057d673d1fec157969ffe02b348d65.html 1713bf741b955c27529ab0fea655a1a7.html
29 00057d673d1fec157969ffe02b348d65.html 76d165f6b9365bd3fff08cef66b437ba.html
30 00057d673d1fec157969ffe02b348d65.html 7f6393dd233808b6c56ae77732972742.html
31 00057d673d1fec157969ffe02b348d65.html c61bdc8e22de07759ee77db0f7627905.html

```

Figure 6. Part of edges result in edgesList.txt.

Step 5. Compute the pageRank score for all the web pages – external_pageRankFile.txt

(1). Use Networkx library in python to compute the page rank.

(2). Set the parameters of pagerank function

alpha=0.85, personalization=None, max_iter=30, tol=1e-06, nstart=None, weight='weight', dangling=None

```

1 import networkx as nx
2
3 graph = nx.read_edgelist("/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/Answer/edgesList.txt",
4 # print graph.nodes()
5
6 pr = nx.pagerank(graph, alpha=0.85, personalization=None, max_iter=100, tol=1.0e-6, nstart=None, weight='weight')
7
8 outputFile = "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/Answer/external_pageRankFile.txt"
9 f = open(outputFile, "w")
10
11 idPrefix = "/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/"
12 for id in pr:
13     # print idPrefix + id + "=" + str(pr[id])
14     f.write(idPrefix + id + "=" + str(pr[id]) + "\n")
15
16 f.close()

```

Figure 7. The code for computing the pageRank score for all the web pages based on the graph of nodes create on edgeLists.txt.

```

1 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/55a3fa04f7ea77bf2575c7f0f36d144.html=2.66141685159e-05
2 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2fc1ca77d6cb28adc678153b6b91f6d1.html=1.2194671148e-05
3 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/03fef402e3548527c7fdea55dfb948.html=1.16664832964e-05
4 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/3939abaf0a32ef3b8c2e71a574e59a29.html=1.20509894513e-05
5 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/3162ed3a8b15c8e1df592813ae5a522.html=1.05561875548e-05
6 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/76399c3ff6499a2b60fc386f5162159.html=1.20074313475e-05
7 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/aa721fd1b35c734b4fc4fca30fb1c.html=0.00100094070386
8 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bd453c677787e6ca4570e07180f2d507.html=0.000956276396764
9 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/fcbebfca3d8bf75f01c71c66dadac28.html=2.32930454244e-05
10 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/342b26547098c145224f8de14bf4b4b.html=7.22734775095e-05
11 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/17edff0fa1c74c7b35c03799ed274a5d.html=5.50130599838e-05
12 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/64abcdcc7d3023300ebf00aeft07252.html=1.05561875548e-05
13 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/ab5fb3316147ab77644d437dd31e5b6.html=1.05561875548e-05
14 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/e7639cc28b0468ac6e001afeb8b4e1eb.html=1.12650624283e-05
15 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/e6583adbccbb2ab0b055c435831725a.html=1.08072555072e-05
16 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/26a4917e335e5fa392d6ae100540cf4.html=1.05561875548e-05
17 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/40965486cc1aa1bbc8987328584f217.html=1.28078701204e-05
18 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2e137b3b136e073cb35d58ec71e39873.html=1.1586461228e-05
19 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/1ce0beb4ee4ab2637812935e08260a7d.html=1.05561875548e-05
20 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6e85f679a23c752a2f0e7d6648c6b17.html=1.39340578915e-05
21 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/617c68ad62b2c7aa8825173c7b267b1.html=2.32899382608e-05
22 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/18a0e7c43f9acf5ebe35442c9e71397.html=1.979165006e-05
23 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/ba5aa8c98d9501ac965545be00da022.html=1.0815647296e-05
24 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/351ccebb8eb8251ef697f01ea1b5c29.html=1.05561875548e-05
25 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a7beb727a3b756d2eb85d1b1d96026c2.html=1.05561875548e-05
26 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/e667ce1cc246afdd5112fe2d1a2380b.html=1.97982692403e-05
27 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/66818ed69bd7b6662ba9598b3095e885.html=2.35131757487e-05
28 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/950a0cd05aea3a62dc26b7748ac559.html=1.05561875548e-05
29 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/5633930e28ce6c5072b52b83a4d38c75.html=1.05561875548e-05
30 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6079f44f61905a42864ad2d9a8bbe5a.html=1.469066077709e-05
31 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6079f44f61905a42864ad2d9a8bbe5a.html=1.469066077709e-05
32 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6079f44f61905a42864ad2d9a8bbe5a.html=1.469066077709e-05

```

Figure 8. Part of the pageRank results in file external_pageRankFile.txt.

- (3). Place the external_pageRankFile.txt in the data folder of the core myexample.
- (4). Add the field in the “managed-schema” and define eventListeners in solrconfig.xml to reload the external file.

```

417 <!-- add pageRankFile -->
418 <fieldType name="external" keyField="id" defVal="0" class="solr.ExternalFileField"/>
419
504 <!-- add pageRankFile -->
505 <field name="pageRankFile" type="external" stored="false" indexed="false"/>

```

Figure 9. Add the field in “managed-schema”.

```

<!-- add external listener -->
<listener event="newSearcher" class="org.apache.solr.schema.ExternalFileFieldReloadListener"/>
<listener event="firstSearcher" class="org.apache.solr.schema.ExternalFileFieldReloadListener"/>

```

Figure 10. Define eventListeners in solrconfig.xml.

Step 6. Compare the results of the two ranking algorithms

localhost/index.php

Search:

Lucene NetworkX

Figure 11. view of the search box. I define the two radios which stands for two algorithms, Lucene and networkx. The default rank algorithm is Lucene.

Attention: Because some result does't have value in field og_url. So, I need to get url from UrlToHtml_NBCNews.csv. It will take around 40 second to get the url. Put the UrlToHtml_NBCNews.csv in the same directory where the index.php locates.

1. Queries

(1). Query – Bitcoin Blockchain

Search: Bitcoin Blockchain

Results 1 - 10 of 617:

How Bitcoin and other cryptocurrencies could kill off cash
<https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036>
 National governments are also looking into creating virtual currencies of their own.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/27640bb3f3bb0345f023330f021248e0.html

Bitcoin pays for entire wedding as its price soars past \$16,000
<https://www.nbcnews.com/tech/innovation/bitcoin-pays-entire-wedding-its-price-soars-past-16-000-n826776>
 With bitcoin hitting a record high of over \$16,000, one wedding in Indiana just got bigger.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c346a4bb29558ea93d980d10cc15b5db.html

What is Bitcoin? And should you invest in it?
<https://www.nbcnews.com/better/business/what-bitcoin-should-you-invest-it-ncna844106>
 Only 24 percent of Americans are familiar with Bitcoin. Here's what you need to know about this "cryptocurrency."
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9ba27c9494397c038fe869cb1e76a27.html

Middle America Is Crazy in Love With Bitcoin
<https://www.nbcnews.com/business/economy/middle-america-crazy-love-bitcoin-n789011>
 In May, there were more searches for Bitcoin than Beyoncé. Cryptocoins are going mainstream as the middleclass wants in on the "Wild West" action.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b4f26bcd9d8731708d5e1972ccf26fd7.html

How Bitcoin and other cryptocurrencies could kill off cash
<https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036>
 National governments are also looking into creating virtual currencies of their own.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bd4b5429a95df351b03e78a7296fb9c3.html

The hidden dangers of buying virtual currency go beyond a simple hack
<https://www.nbcnews.com/business/news/hidden-dangers-buying-virtual-currency-go-beyond-simple-hack-n852706>
 Cyberthieves can break into crypto exchanges, drain crypto wallets, and infect computers with malware.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/68fac26a85fda5d7984e109781f38e81.html

Bitcoin pays for entire wedding as its price soars past \$16,000
<https://www.nbcnews.com/tech/innovation/bitcoin-pays-entire-wedding-its-price-soars-past-16-000-n826776>
 With bitcoin hitting a record high of over \$16,000, one wedding in Indiana just got bigger.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/8cda735f82094cc96ccb46de189b7fb3.html

Middle America Is Crazy in Love With Bitcoin
<https://www.nbcnews.com/business/economy/middle-america-crazy-love-bitcoin-n789011>
 In May, there were more searches for Bitcoin than Beyoncé. Cryptocoins are going mainstream as the middleclass wants in on the "Wild West" action.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6593288fd99833f4451215de9c27e60.html

What is Bitcoin? And should you invest in it?
<https://www.nbcnews.com/better/business/what-bitcoin-should-you-invest-it-ncna844106>
 Only 24 percent of Americans are familiar with Bitcoin. Here's what you need to know about this "cryptocurrency."
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/eaaf75aac08fe9029b5cd6f1721d149.html

The hidden dangers of buying virtual currency go beyond a simple hack
<https://www.nbcnews.com/business/news/hidden-dangers-buying-virtual-currency-go-beyond-simple-hack-n852706>
 Cyberthieves can break into crypto exchanges, drain crypto wallets, and infect computers with malware.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a614919adae2c3dbd1fe0a718f0a301a.html

Figure 12. Lucene Algorithm – Bitcoin Blockchain.

Search: Bitcoin Blockchain

Results 1 - 10 of 617:

NBC News - Breaking News & Top Stories US & Local News
<https://www.nbcnews.com/>
 Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
 MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b9383aab8770aa4a973.html

Business & Finance News, Reports & Videos - NBC News
<https://www.nbcnews.com/business>
 Find the latest news, videos, and photos on finance, industry trends, money, and more on NBCNews.com. Read business reports and watch industry-specific videos online.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c74d9a1aaf8c112e26381d5a6988a355.html

Tech: Latest US & Global News, Innovations, Gadgets, & More - NBC News
<https://www.nbcnews.com/tech>
 Find the latest tech news stories, photos, and videos on NBCNews.com. Read headlines covering cyber attacks, top new tech products, tech tips & more.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/76d165f6b9365bd3fff08cef66b437ba.html

Science: Space, Environment & Trends - NBC News
<https://www.nbcnews.com/science>
 Find the latest science news articles, photos and videos covering space, the environment, human development and more on NBCNews.com.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/1713bf741b955c27529ab0fea655a1a7.html

This futuristic jet pack that lets users fly up to 10,000 feet in the sky
<https://www.nbcnews.com/mach/video/this-futuristic-jet-pack-that-lets-users-fly-up-to-10-000-feet-in-the-sky-1189436995946>
 Zapata is the company best known for its hydro-flyer. It's now designed the Flyboard Air which is a jet-powered personal aerial vehicle that can go up to 10,000 feet in the sky.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/36d2ccfc582c86dc7940542b6bdabfe.html

Why YouTube's algorithm boosted conspiracy theory videos in the wake of the Parkland shooting
<https://www.nbcnews.com/mach/video/why-youtube-s-algorithm-boosted-conspiracy-theory-videos-in-the-wake-of-the-parkland-shooting-1187660356671>
 YouTube's recommendation algorithm has come under scrutiny before, but the recent school shooting in Parkland, Florida, launched a fresh spate of criticism. Following the shooting, the No. 1 trending video on the platform was a clip claiming one of the survivors was an actor. YouTube eventually removed the video, saying it had been misclassified by the company's systems, and that YouTube would make efforts to fix the larger issues. But the controversy highlights the larger issue of information and truth, amid not only a polarizing political climate but also the era's social media echo-chamber.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/88992172578eb6d14b9af9eb3f45091.html

From space dream to space junk: The Vanguard 1 satellite completes 60 years in space today
<https://www.nbcnews.com/mach/video/from-space-dream-to-space-junk-the-vanguard-1-satellite-completes-60-years-in-space-today-1188094531644>
 Just months after the Sputnik launch, the U.S. government began testing the Vanguard project. Exactly 60 years ago, on March 17th 1958, Vanguard 1 was sent into space from Cape Canaveral, Florida, becoming the second satellite launched by the U.S. and the first ever to use solar cell power. After it lost communication in 1964, it is now the oldest piece of man-made space debris.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b0e8908022cd626f7a6df8c281e8e4f8.html

Pi in the Sky: How a NASA scientist uses Pi to look for life beyond Earth
<https://www.nbcnews.com/mach/video/pi-in-the-sky-how-a-nasa-scientist-uses-pi-to-look-for-life-beyond-earth-1185847363999>
 Pi is a mathematical constant that is embedded in most calculations. Dr. Luisa Rebull, who is a research scientist at Caltech, is studying Kepler data to learn more about young stars and if there are planets around them. She explains how Pi is crucial to her calculations.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/7ea6d6fe5260f68a910e455db96b3e0f.html

Astronaut Scott Kelly's genes show long-term changes after a year in space
<https://www.nbcnews.com/mach/video/astronaut-scott-kelly-s-genes-show-long-term-changes-after-a-year-in-space-1186826819794>
 NASA recently released preliminary findings from its Twin Study involving astronauts Scott Kelly and Mark Kelly. Researchers now know that 93% of Scott's genes returned to normal after spending almost a year in space. However, the remaining 7% point to possible longer term changes in his genes.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bb19ed47761728964946ba72b5287d85.html

Figure 13. Networkx Algorithm - Bitcoin Blockchain.

(2). Query – Stephen Hawking

Search: Stephen Hawking Lucene NetworkX

Results 1 - 10 of 917:

A brief history of Stephen Hawking: From Cambridge to cultural icon
<https://www.nbcnews.com/mach/science/brief-history-stephen-hawking-cambridge-cultural-icon-ncsl856456>
Stephen Hawking, a British theoretical physicist who became a household name, died at the age of 76.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/8a66c04ab166f31adf1c1cc48566ca8f.html

British physicist Stephen Hawking, among world's greatest minds of science, dies at 76 - NBC News
<https://www.nbcnews.com/news/world/british-physicist-stephen-hawking-among-world-s-greatest-minds-science-n702301>
Stephen Hawking, the British theoretical physicist who defied the odds his entire life, has died, his family announced early Wednesday.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9a3cdce7ec4293c731d64aaf128acaac.html

Stephen Hawking's life was made possible by access to great health care and social support
<https://www.nbcnews.com/think/opinion/stephen-hawking-s-life-was-made-possible-access-great-health-ncna856971>
To honor the scientist's legacy, we must create more possibilities for people with disabilities
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/70f08570f79f885997392971220edae8.html

'I'm an Atheist': Stephen Hawking on God and Space Travel - NBC News
<https://www.nbcnews.com/science/space/i-m-atheist-stephen-hawking-god-space-travel-n210076>
Stephen Hawking says flat-out that he doesn't believe in God, but he does believe that space travel offers the best hope for our species' immortality.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4823aef23edcdabf0e603776c2728306.html

'I'm an Atheist': Stephen Hawking on God and Space Travel - NBC News
<https://www.nbcnews.com/science/space/i-m-atheist-stephen-hawking-god-space-travel-n210076>
Stephen Hawking says flat-out that he doesn't believe in God, but he does believe that space travel offers the best hope for our species' immortality.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/25df869d090e2cefec0649982b13eb03.html

British physicist Stephen Hawking, among world's greatest minds of science, dies at 76 - NBC News
<https://www.nbcnews.com/news/world/british-physicist-stephen-hawking-among-world-s-greatest-minds-science-n702301>
Stephen Hawking, the British theoretical physicist who defied the odds his entire life, has died, his family announced early Wednesday.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6b8cd2f6dd7bb98b6426467f0b7fce4a.html

Stephen Hawking Says Humans Must Leave Earth Within 600 Years
<https://www.nbcnews.com/mach/science/stephen-hawking-says-humans-must-leave-earth-within-600-years-ncna818926>
'We are running out of space and the only places to go are other worlds.'
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/97224b32ad6f5147b1cf35d1b414a429.html

Six years after zero-G flight, Stephen Hawking is still up for a space trip - NBC News
<http://www.nbcnews.com/science/science-news/six-years-after-zero-g-flight-stephen-hawking-still-space-f6C9703084>
It's been six long years since world-famous physicist Stephen Hawking got a taste of weightlessness during a zero-G airplane flight from NASA's Kennedy Space Center — but he still wants to feel the real deal aboard Virgin Galactic's SpaceShipTwo rocket plane.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/cf84bb1ba5c7b70f685b7fe3f497d0f7.html

What Stephen Hawking taught us about black holes
<https://www.nbcnews.com/mach/science/what-stephen-hawking-taught-us-about-black-holes-ncna857471>
Turns out, black holes aren't so black.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/e4ca8db3fedf62e5e67b4ec7d1d96fc5.html

Stephen Hawking Says Humans Must Leave Earth Within 600 Years
<https://www.nbcnews.com/mach/science/stephen-hawking-says-humans-must-leave-earth-within-600-years-ncna818926>
'We are running out of space and the only places to go are other worlds.'
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/d81461d213cbbc7c6fc4289abaded04a.html

Figure 14. Lucene Algorithm – Stephen Hawking.

Search: Stephen Hawking Lucene NetworkX

Results 1 - 10 of 917:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b93835aab8770aa4a973.html

THINK: Fresh Opinions, Sharp Analyses and Powerful Essays | NBC News
<https://www.nbcnews.com/think>
THINK is NBC News' home for op-eds, in-depth analyses and essays about about news and current events. Find opinions that will make you think differently and deeply about the world and our place in it.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9c6c23e46da1e24c7a9186ac87738aa9.html

Health News: Disease, Nutrition, Healthcare & More - NBC News
<https://www.nbcnews.com/health>
Find the latest news on food & diet, healthcare and healthy living on NBCNews.com. Read headlines and watch videos on medicine, mental illness, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/526e34baa0856a7074d1d43105adb2d1.html

U.S. News: Breaking News Photos, & Videos on the United States - NBC News
<https://www.nbcnews.com/news/us-news>
Find the latest U.S. news stories, photos, and videos on NBCNews.com. Read breaking headlines covering politics, economics, pop culture, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/97c038b2ce9ebc048fa7e31911b73f94.html

Science: Space, Environment & Trends - NBC News
<https://www.nbcnews.com/science>
Find the latest science news articles, photos and videos covering space, the environment, human development and more on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/1713bf741b955c27529ab0fea655a1a7.html

Photo: Latest Compelling Image Galleries, Photos & More - NBC News
<https://www.nbcnews.com/news/photo>
Find photo galleries with beautiful, provoking images on latest news stories on NBCNews.com. Read headlines with photos covering natural disasters, world news, culture, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a4d180d4a93c862017903684352762c4.html

Video - NBC News
<https://www.nbcnews.com/video>
Video
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/98fb56caf81c4f46fea84bd8a9a35b7f.html

News: Latest and Breaking News Stories, Photos & Videos - NBC News
<https://www.nbcnews.com/news>
Find the top breaking news articles, photos, and videos on NBCNews.com. Read headlines covering top national and global stories on crime, politics, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/92b55b7656ffe95a054a17ae2eccb742.html

Figure 15. Networkx Algorithm - Stephen Hawking.

(3). Query – Falcon Heavy

Search: Falcon Heavy • Lucene • NetworkX Submit

Results 1 - 10 of 2164:

SpaceX's Falcon Heavy launch gives big boost to Elon Musk's Mars dream
<https://www.nbcnews.com/mach/science/spacex-s-falcon-heavy-launch-gives-big-boost-elon-musk-ncna845256>
The successful launch was one part publicity stunt, one part spaceflight marvel.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/0c5f47b6bdeb937560d3d1b8e393505e.html

SpaceX's Falcon Heavy rocket nails its maiden test flight
<https://www.nbcnews.com/mach/science/watch-spacex-s-falcon-heavy-rocket-make-its-maiden-flight-ncna845096>
The success ushers in a new era of spaceflight.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/52f82c89b32ab027a06704f5236b735d.html

SpaceX's Falcon Heavy rocket nails its maiden test flight
<https://www.nbcnews.com/mach/science/watch-spacex-s-falcon-heavy-rocket-make-its-maiden-flight-ncna845096>
The success ushers in a new era of spaceflight.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/d79e517b64fba00325501de49b9f3136.html

SpaceX's Falcon Heavy launch gives big boost to Elon Musk's Mars dream
<https://www.nbcnews.com/mach/science/spacex-s-falcon-heavy-launch-gives-big-boost-elon-musk-ncna845256>
The successful launch was one part publicity stunt, one part spaceflight marvel.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/faf498af542d8d80fd1c6ec424e8bfd8.html

SpaceX's 'Falcon' feat may be just a prelude to the main event
<https://www.nbcnews.com/mach/science/spacex-s-falcon-feat-may-be-just-prelude-main-event-ncna846446>
Elon Musk looks forward to the Big F---ing Rocket that he says will take humans to the moon and Mars.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b4dee84034b9c558d92d2db3c862f884.html

Here's what will happen to the Tesla that SpaceX shot into space
<https://www.nbcnews.com/mach/science/here-s-what-will-happen-tesla-spacex-shot-space-ncna845566>
Experts predict smooth sailing — and, ultimately, salvage.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a7e396dbf8c3db4dff616627dbc2c290.html

Month in Space Pictures: Cosmic Penguin and Playing Mars
<https://www.nbcnews.com/mach/science/month-space-pictures-cosmic-penguin-playing-mars-ncsl852081>
A really big rocket, a sports car circles the Earth and more of the month's best space photos.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4f079dad27b5fbbe7cb11c4476a2824a.html

SpaceX's 'Falcon' feat may be just a prelude to the main event
<https://www.nbcnews.com/mach/science/spacex-s-falcon-feat-may-be-just-prelude-main-event-ncna846446>
Elon Musk looks forward to the Big F---ing Rocket that he says will take humans to the moon and Mars.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/fc76690af08b18c4a544b872912d1b12.html

Space News: Breaking News on Earth, Space Exploration, Discoveries & More - NBC News
<https://www.nbcnews.com/science/space>
Find the latest news, photos, and videos of outer space on NBCNews.com. Read headlines covering stories on our planet, spacecrafts & probes, new studies & missions, and more
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6d1a1784834fdb6e59938db563cf3653.html

SpaceX wants to bring the World Wide Web to the whole wide world
<https://www.nbcnews.com/mach/science/how-spacex-aims-bring-high-speed-internet-whole-world-ncna853766>
Because Elon Musk just wasn't busy enough...
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/45a80d696aaa674ca919d0f9f021b5db.html

Figure 16. Lucene Algorithm – Falcon Heavy.

Search: Falcon Heavy • Lucene • NetworkX Submit

Results 1 - 10 of 2164:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

Nightly News with Lester Holt: The Latest News Stories Every Night - NBC News
<https://www.nbcnews.com/nightly-news>
Coverage of the latest global and U.S. breaking news stories by Lester Holt on NBCNews.com. Watch videos of breaking news, politics, health, lifestyle and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c61bdc8e22de07759ee77db0f7627905.html

World News: Latest Breaking Global News Stories, Photos & Videos - NBC News
<https://www.nbcnews.com/news/world>
Find the latest breaking news stories, photos and videos from around the world at NBCNews.com. Read headlines covering top news stories, business, technology, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/47f28befb06f585233946306ba535baa.html

Latino: Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/latino>
Find the latest Latino news articles, photos, and videos covering stories, issues and opinions of the Latino community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/39f2fef04829470aada53df696d80543.html

Science: Space, Environment & Trends - NBC News
<https://www.nbcnews.com/science>
Find the latest science news articles, photos and videos covering space, the environment, human development and more on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/1713bf741b955c27529ab0fea655a1a7.html

Weather: News, Photos & Videos on Natural Disasters, Severe Weather & More - NBC News
<https://www.nbcnews.com/news/weather>
Find the latest weather stories, photos, and videos on NBCNews.com. Read headlines covering natural disasters, answers to common questions, severe conditions, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/7f6393dd233808b6c56ae77732972742.html

Photo: Latest Compelling Image Galleries. Photos & More - NBC News
<https://www.nbcnews.com/news/photo>
Find photo galleries with beautiful, provoking images on latest news stories on NBCNews.com. Read headlines with photos covering natural disasters, world news, culture, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a4d180d4a93c862017903684352762c4.html

Video - NBC News
<https://www.nbcnews.com/video>
Video
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/98fb56caf81c4f46fea84bd8a9a35b7f.html

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<https://www.nbcnews.com/news>
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/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/92b55b7656ffe95a054a17ae2eccb742.html

Figure 17. Networkx Algorithm - Falcon Heavy.

(4). Query – Syrian War

Search: Syrian War Lucene NetworkX Submit

Results 1 - 10 of 5857:

Syria's Children - NBC News
<https://www.nbcnews.com/storyline/syrias-children>
 News, photos and videos of Syrian children during the civil war.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/71c11825944c0a1241e64dd2252ac063.html

Syrian Civil War: Photo of Photographer's Rescue Goes Viral - NBC News
<https://www.nbcnews.com/storyline/syrias-children/syrian-civil-war-photo-photographer-s-rescue-goes-viral-n748146>
 Abd Alkader Habak told NBC News he was photographing Syrians being evacuated aboard buses on the outskirts of the city of Aleppo Saturday when the huge bomb hit.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/04a57e367dbd84aa1b602a2a292efc24.html

Aleppo's Children of War - NBC News
<https://www.nbcnews.com/storyline/aleppos-children>
 News on the civil war in Syria and the toll it has taken on the Syrian children of Aleppo.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/89011158f0895addcaa4bb0ce6c96b14.html

Syria's civil war has been raging for 7 years. What's behind it? - NBC News
<https://www.nbcnews.com/news/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851>
 NBC News takes a look at what is driving the Syrian war, a conflict which has killed hundreds of thousands of people and forced millions into exile.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/fc67a00e402d988b9c4c895a5e6cce41.html

Syria's civil war has been raging for 7 years. What's behind it? - NBC News
<https://www.nbcnews.com/news/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851>
 NBC News takes a look at what is driving the Syrian war, a conflict which has killed hundreds of thousands of people and forced millions into exile.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/be66bde3e9b11ac19f5dd9cabdcf736d.html

'Barrel bombs' just another symbol of brutality in Syrian civil war - NBC News
<http://www.nbcnews.com/news/other/barrel-bombs-just-another-symbol-brutality-syrian-civil-war-f2D11765640>
 DAMASCUS — In this war where children are being brutalized by both sides, "barrel bombs" have become a trademark of the conflict. Dropped from low-flying helicopters on civilian streets in the northern city of Aleppo, the bombs are crudely packed with nails, gasoline and TNT. Over the weekend, children as young as one were killed by the inaccurate but lethal weapons.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9cca31dfe0406e827aa47708fe1944b2.html

Children among the injured in besieged Damascus suburb
<https://www.nbcnews.com/slideshow/children-among-injured-besieged-damascus-suburb-n834526>
 According to Reuters, residents and a war monitor said bombs from suspected Russian jets killed at least 20 people in a suburb of Damascus.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/ebd0729f0af80150801f41b193a5686d.html

Children among the injured in besieged Damascus suburb
<https://www.nbcnews.com/slideshow/children-among-injured-besieged-damascus-suburb-n834526>
 According to Reuters, residents and a war monitor said bombs from suspected Russian jets killed at least 20 people in a suburb of Damascus.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/3cbbaf31428a1f250392a917efbf97cd.html

Syria's Suffering Families - NBC News
<https://www.nbcnews.com/storyline/syrias-suffering-families>
 NBC News is tracking displaced and anguished Syrian families as they cope with the violence and fallout of civil war.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/5304ced5988d239df5bb7327e4217300.html

Syria's civil war has been raging for 7 years. What's behind it? - NBC News
<https://www.nbcnews.com/news/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851>
 NBC News takes a look at what is driving the Syrian war, a conflict which has killed hundreds of thousands of people and forced millions into exile.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/cb691910285b3dee6664c8059c78d806.html

Figure 18. Lucene Algorithm – Syrian War.

Search: Syrian War Lucene NetworkX Submit

Results 1 - 10 of 5857:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
 Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
 Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

Nightly News with Lester Holt: The Latest News Stories Every Night - NBC News
<https://www.nbcnews.com/nightly-news>
 Coverage of the latest global and U.S. breaking news stories by Lester Holt on NBCNews.com. Watch videos of breaking news, politics, health, lifestyle and more.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c61bdc8e22de07759ee77db0f7627905.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
 MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b93835aab8770aa4a973.html

Politics: Congress, Political Parties, National Security & More - NBC News
<https://www.nbcnews.com/politics>
 Find the latest political news stories, photos, and videos on NBCNews.com. Read breaking headlines covering Congress, Democrats, Republicans, election news, and more.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/36d3d20e5dc6ee6d35aa7fc00eb38655.html

THINK: Fresh Opinions, Sharp Analyses and Powerful Essays | NBC News
<https://www.nbcnews.com/think>
 THINK is NBC News' home for op-eds, in-depth analyses and essays about news and current events. Find opinions that will make you think differently and deeply about the world and our place in it.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9c6c23e46da1e24c7a9186ac87738aa9.html

NBC News
<https://www.nbcnews.com/feature/nbc-out>
NBC News
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c170cde13f2c57669706e4e0dfa7d8d.html

Business and Finance News, Reports & Videos - NBC News
<https://www.nbcnews.com/business>
 Find the latest news, videos, and photos on finance, industry trends, money, and more on NBCNews.com. Read business reports and watch industry-specific videos online.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c74d9a1aa8c112e26381d5a6988a355.html

World News: Latest Breaking Global News Stories, Photos & Videos - NBC News
<https://www.nbcnews.com/news/world>
 Find the latest breaking news stories, photos and videos from around the world at NBCNews.com. Read headlines covering top news stories, business, technology, and more.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/47f28befb06f585233946306ba535baa.html

Asian America: Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/asian-america>
 Find the latest Asian American news articles, photos, and videos covering stories, issues, and opinions of the Asian American community on NBCNews.com.
 /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/03190167031f6cef7c7ba9bc8d55d68.html

Figure 19. Networkx Algorithm - Syrian War.

(5). Query – LA Rams

Search: LA Rams Lucene NetworkX Submit

Results 1 - 10 of 833:

Colin Kaepernick's Protest is Part of Long Sports Tradition - NBC News
<https://www.nbcnews.com/news/sports/how-history-informs-colin-kaepernick-s-national-anthem-protest-n639366>
Kaepernick is famous for his scrambling in football, but he has not dodged the controversy generated by his decision to sit out the national anthem.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/df203b7afdd491de275cd4a1acb010d9.html

Colin Kaepernick's Protest is Part of Long Sports Tradition - NBC News
<https://www.nbcnews.com/news/sports/how-history-informs-colin-kaepernick-s-national-anthem-protest-n639366>
Kaepernick is famous for his scrambling in football, but he has not dodged the controversy generated by his decision to sit out the national anthem.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/dafb3070e42d4723cb274ff695438d53.html

Sports broadcasting legend Dick Enberg dies at 82 - NBC News
<https://www.nbcnews.com/news/sports/sports-broadcasting-legend-dick-enberg-dies-82-n832076>
Dick Enberg, the longtime sportscaster who got his big break with UCLA basketball and went on to call Super Bowls, Olympics, Final Fours and Angels and Padres baseball games, has died.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/588fe1873624f6616c6f5ebd657fa9d4.html

Black Quarterbacks Who've Played in the Super Bowl
<https://www.nbcnews.com/slideshow/black-quarterbacks-who-ve-played-super-bowl-n513226>
Cam Newton was the sixth African-American quarterback to start in the Super Bowl.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6e0ac6a8ee069d465b8ac9e58735d812.html

Sports broadcasting legend Dick Enberg dies at 82 - NBC News
<https://www.nbcnews.com/news/sports/sports-broadcasting-legend-dick-enberg-dies-82-n832076>
Dick Enberg, the longtime sportscaster who got his big break with UCLA basketball and went on to call Super Bowls, Olympics, Final Fours and Angels and Padres baseball games, has died.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/89e96228790328f19dbd40d710d56b52.html

Bernie Casey, Pro Football Player Turned Fan-Favorite Actor, Dies at 78
<https://www.nbcnews.com/pop-culture/music/bernie-casey-pro-football-player-turned-fan-favorite-actor-dies-n803291>
Bernie Casey, a professional football player turned actor known for parts in "Revenge of the Nerds" and "I'm Gonna Git You Sucka," has died.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b03ed460d91e90414adef40257d462c.html

Bernie Casey, Pro Football Player Turned Fan-Favorite Actor, Dies at 78
<https://www.nbcnews.com/pop-culture/music/bernie-casey-pro-football-player-turned-fan-favorite-actor-dies-n803291>
Bernie Casey, a professional football player turned actor known for parts in "Revenge of the Nerds" and "I'm Gonna Git You Sucka," has died.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b2082684e2a0d32c57da12e5300730a4.html

Meet the Press Transcript - October 11, 2015 - NBC News
<https://www.nbcnews.com/meet-the-press/meet-press-transcript-october-11-2015-n442476>
Guests: Sen. Bernie Sanders (I-VT), Rep. Charlie Dent (R-PA), Rep. Dave Brat (R-VA), Eugene Robinson, Kathleen Parker, Hugh Hewitt, Nathan Gonzales
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bcca8e3128e3153219badc5caab8aecf.html

Meet the Press Transcript - October 11, 2015 - NBC News
<https://www.nbcnews.com/meet-the-press/meet-press-transcript-october-11-2015-n442476>
Guests: Sen. Bernie Sanders (I-VT), Rep. Charlie Dent (R-PA), Rep. Dave Brat (R-VA), Eugene Robinson, Kathleen Parker, Hugh Hewitt, Nathan Gonzales
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/86b5f9ff3ef0f7952f479810b1b3f3a2.html

Louisiana Results 2016 - NBC News
<https://www.nbcnews.com/politics/2016-election/la>
View voting results for President, Senate, and House votes for Louisiana state in the 2016 presidential election at NBCNews.com
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/f0bf3884fe667d28b6996686b20cc11e.html

Figure 20. Lucene Algorithm – LA Rams.

Search: LA Rams Lucene NetworkX Submit

Results 1 - 10 of 833:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

NBCBLK: Black Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/nbcblk>
Find the latest news articles, photos, and videos covering stories, issues, and opinions of the Black community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2895cf0a25d3e40ed5513551fca34fee.html

Latino: Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/latino>
Find the latest Latino news articles, photos, and videos covering stories, issues and opinions of the Latino community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/39f2fef04829470aada53df696d80543.html

Tech: Latest US & Global News, Innovations, Gadgets, & More - NBC News
<https://www.nbcnews.com/tech>
Find the latest tech news stories, photos, and videos on NBCNews.com. Read headlines covering cyber attacks, top new tech products, tech tips & more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/76d165f6b9365bd3fff08cef66b437ba.html

NBC Affiliates - NBC News
<https://www.nbcnews.com/news/us-news/nbc-affiliates-n19981>
NBC's affiliated stations
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9e2e4924ea7f744bee83521bd5fb6911.html

News: Latest and Breaking News Stories, Photos & Videos - NBC News
<https://www.nbcnews.com/news>
Find the top breaking news articles, photos, and videos on NBCNews.com. Read headlines covering top national and global stories on crime, politics, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/92b55b7656ffe95a054a17ae2eccb742.html

How Mika Brzezinski found her value and got paid what she's worth
<https://www.nbcnews.com/better/video/how-mika-brzezinski-found-her-value-and-got-paid-what-she-s-worth-1189457987619>
TV anchor Mika Brzezinski says women advocating for what they're worth will solve the pay inequality problems uncovered by the #MeToo movement and level the playing field.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a644813b0f98e1e8015b53094f665f6d.html

How not to choke in sports and other pressure-charged situations
<https://www.nbcnews.com/better/video/how-not-to-choke-in-sports-and-other-pressure-charged-situations-1186761795616>
When the pressure's on and it matters most, you need to perform your best. Here's how to do it.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/cb54765f094594fe92cb0a6ce2a5f568.html

How to lose weight and why it's so hard
<https://www.nbcnews.com/better/video/how-to-lose-weight-and-why-it-s-so-hard-1187543619775>
Peek into the surprising science of why losing weight is hard and what you can do help your body shed pounds.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/033c1837d10de5e1405852a03ca972b4.html

Figure 21. Networkx Algorithm - LA Rams.

(6). Query – Black Panther

Search: Black Panther Lucene NetworkX Submit

Results 1 - 10 of 3326:

'Black Panther's' Wakanda sheds light on black excellence
<https://www.nbcnews.com/news/nbcblk/black-panther-s-wakanda-sheds-light-black-excellence-n844801>
Wakanda, an African nation untouched by the outside world, sheds light on black excellence in "Black Panther."
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/8af5f7bca5a961806b9d290b9b5bf465.html

'Black Panther' sets Fandango record as top early pre-selling Marvel movie
<https://www.nbcnews.com/news/nbcblk/black-panther-sets-fandango-record-top-pre-selling-marvel-movie-n836631>
Advance sales for Disney-Marvel's "Black Panther" have set a new record for Fandango as the top seller among Marvel Cinematic Universe movies in the first 24 hours.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/91a1f54f5303b435bf66d7c3e8b14be0.html

For 'Black Panther' novelist, journalism and sci-fi bring 'hidden to light'
<https://www.nbcnews.com/news/nbcblk/black-panther-novelist-journalism-sci-fi-bring-hidden-light-n848011>
Jesse J. Holland, the author of "The Black Panther: Who Is The Black Panther?" explains his role as a journalist "to bring the hidden to light."
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/da5cef8473f052864b0768a8b5b4cef9.html

Plot to destroy 'Black Panther' ratings thwarted by Facebook
<https://www.nbcnews.com/tech/internet/plot-destroy-black-panther-ratings-thwarted-facebook-n844226>
The superhero film has a predominantly black cast, including strong female characters.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bb946cf5cc99f307c49541d42b809122.html

'Black Panther' blows away box office with \$192 million weekend
<https://www.nbcnews.com/pop-culture/movies/black-panther-blows-away-box-office-192-million-weekend-n849246>
"Black Panther" blew past already high expectations to post the fifth-highest-grossing weekend debut ever.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/d068cc45ecfe1a58c088cce2fabf31de.html

Before 'Black Panther' movie, black comic creators spent years breaking down barriers
<https://www.nbcnews.com/news/nbcblk/black-panther-black-comic-creators-spent-years-breaking-down-barriers-n848461>
Before the "Black Panther" movie, black illustrators, writers, editors and colorists have been working behind the scenes creating memorable comics and storylines.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2b8e88da39cb1bc29834babac2cd3a81c.html

'Black Panther' actress Janeshia Adams-Ginyard talks living the stuntwoman life
<https://www.nbcnews.com/news/nbcblk/black-panther-actress-janeshia-adams-ginyard-talks-living-stuntwoman-life-n847646>
If you've watched shows like "True Blood" and "American Horror Story," you've seen Janeshia Adams-Ginyard in action and maybe didn't even know it.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/60af0fc06ba7eb865bb56ea54e436c4.html

The defeat of Killmonger in 'Black Panther' holds lessons for Israel
<https://www.nbcnews.com/think/opinion/defeat-killmonger-black-panther-holds-lessons-israel-nca850831>
Destuctive, imperialist tactics will never result in a true liberation of the people the movie's villain seeks to uplift.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/892e9980886bbdf9cd4f2257929f187.html

For 'Black Panther' novelist, journalism and sci-fi bring 'hidden to light'
<https://www.nbcnews.com/news/nbcblk/black-panther-novelist-journalism-sci-fi-bring-hidden-light-n848011>
Jesse J. Holland, the author of "The Black Panther: Who Is The Black Panther?" explains his role as a journalist "to bring the hidden to light."
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6c9a3755cba78ef2918fa2e6044c6b2f.html

'Black Panther' stars discuss hope for Marvel film and impact
<https://www.nbcnews.com/news/nbcblk/stars-black-panther-discuss-hope-marvel-film-impact-n847706>
"Black Panther" stars Lupita Nyong'o and Chadwick Boseman, Marvel Studios President Kevin Feige and Director Ryan Coogler discuss films' impact.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/50548b842689c214630a571f3eec7199.html

Figure 22. Lucene Algorithm – Black Panther.

Search: Black Panther Lucene NetworkX Submit

Results 1 - 10 of 3326:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Nightly News with Lester Holt: The Latest News Stories Every Night - NBC News
<https://www.nbcnews.com/nightly-news>
Coverage of the latest global and U.S. breaking news stories by Lester Holt on NBCNews.com. Watch videos of breaking news, politics, health, lifestyle and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c61bd8e22de07759ee77db0f7627905.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b93835aab8770aa4a973.html

THINK: Fresh Opinions, Sharp Analyses and Powerful Essays | NBC News
<https://www.nbcnews.com/think>
THINK is NBC News' home for op-eds, in-depth analyses and essays about news and current events. Find opinions that will make you think differently and deeply about the world and our place in it.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9c6c23e46da1e24c7a9186ac87738aa9.html

Health News: Disease, Nutrition, Healthcare & More - NBC News
<https://www.nbcnews.com/health>
Find the latest news on food & diet, healthcare and healthy living on NBCNews.com. Read headlines and watch videos on medicine, mental illness, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/526e34baa0856a7074d1d43105adb2d1.html

NBC News
<https://www.nbcnews.com/feature/nbc-out>
NBC News
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c170cde13f2c57669706e4e0dfa7d8d.html

Pop Culture: Entertainment News and Celebrity Stories, Photos & Videos - NBC News
<https://www.nbcnews.com/pop-culture>
Find the latest pop culture news, videos and photos on NBCNews.com. Read headlines covering celebrity news and style, music, TV, movies, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/3871ecf889e1e0ae68fefef8371d3ed77.html

Asian America: Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/asian-america>
Find the latest Asian American news articles, photos, and videos covering stories, issues, and opinions of the Asian American community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/03190167031f6cef7c7ba9bc8d55d68.html

NBCBLK: Black Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/nbcblk>
Find the latest news articles, photos, and videos covering stories, issues, and opinions of the Black community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2895cf0a25d3e40ed5513551fca34fee.html

Tech: Latest US & Global News, Innovations, Gadgets, & More - NBC News
<https://www.nbcnews.com/tech>
Find the latest tech news stories, photos, and videos on NBCNews.com. Read headlines covering cyber attacks, top new tech products, tech tips & more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/76d165f6b9365bd3fff08cef66b437ba.html

Figure 23. Networkx Algorithm - Black Panther.

(7). Query – Austin Bombings

Search: Austin Bombings Lucene NetworkX Submit

Results 1 - 10 of 4158:

Police identify teen killed in Austin package bombing as investigation grows - NBC News
<https://www.nbcnews.com/news/us-news/police-identify-teen-killed-austin-package-bombing-investigation-grows-n856371>
Two people have been killed and two others were injured in a spate of package bombings in Austin, Texas, and federal authorities have joined the investigation.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a97f90d84d2281f7ac073574bf320c5f.html

Austin explosions: 'Serial bomber' hunted after tripwire sets off 4th blast - NBC News
<https://www.nbcnews.com/news/us-news/deadly-austin-bombings-were-meant-send-message-police-chief-says-n857786>
Authorities warned that the devices appear to be getting more sophisticated. The FBI has sent 350 special agents to Austin, Texas, as well as extra bomb squads.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/04e34d5a36aa891269d84d4e1ebbebe1f.html

Austin explosions: 'Serial bomber' hunted after tripwire sets off 4th blast - NBC News
<https://www.nbcnews.com/news/us-news/deadly-austin-bombings-were-meant-send-message-police-chief-says-n857786>
Authorities warned that the devices appear to be getting more sophisticated. The FBI has sent 350 special agents to Austin, Texas, as well as extra bomb squads.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9b8acb6837de71b5a2832b7fe9b08c0d.html

Austin Mayor Steve Adler on city's deadly package bombings - NBC News
<https://www.nbcnews.com/widget/video-embed/1184733251954>
Austin Mayor Steve Adler comments ongoing investigation into the deadly string of package bombings while the city continues to host SXSW 2018.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/eaec7fdfdf8c1cc2dd81920dc6bfa8aa.html

Police identify teen killed in Austin package bombing as investigation grows - NBC News
<https://www.nbcnews.com/news/us-news/police-identify-teen-killed-austin-package-bombing-investigation-grows-n856371>
Two people have been killed and two others were injured in a spate of package bombings in Austin, Texas, and federal authorities have joined the investigation.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/941f1e66fd2e65881ed6552c730dce16.html

Austin, Texas, on edge after spate of package bombs kills two - NBC News
<https://www.nbcnews.com/news/us-news/austin-texas-edge-after-spate-package-bombs-kill-two-n855956>
The Texas capital was wondering whether it a serial bomber was loose after explosions killed two residents and badly wounded two others.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b2554707390364028a055829c56264b8.html

Austin, Texas, on edge after spate of package bombs kills two - NBC News
<https://www.nbcnews.com/news/us-news/austin-texas-edge-after-spate-package-bombs-kill-two-n855956>
The Texas capital was wondering whether it a serial bomber was loose after explosions killed two residents and badly wounded two others.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/f3b172c74e35e2227c94754ef7752162.html

NBC News - Breaking News & Top Stories - Latest World, US & Local News - NBC News
<http://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c048c6a1e2a8e7390720e8899b293739.html

Celia Cruz To Be Remembered with Grammy Lifetime Achievement Award
<https://www.nbcnews.com/news/latino/celia-cruz-be-remembered-grammy-lifetime-achievement-award-n516956>
Thirteen years after her death, legendary Salsa musician Celia Cruz will be honored with a GRAMMY Lifetime Achievement Award.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/86acd17246e068a7effb56277e7ea782.html

California Affirmative Action Bill Sparks Fierce Debate
<https://www.nbcnews.com/news/latino/california-affirmative-action-bill-sparks-fierce-debate-n87426>
A proposal to reinstate affirmative action as a factor in California college admissions has caused a rift among Asian, Latino and black lawmakers.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/6ba50583a1abbcf4fba6f4df6840ed30.html

Figure 24. Lucene Algorithm – Austin Bombings.

Search: Austin Bombings Lucene NetworkX Submit

Results 1 - 10 of 4158:

NBC News - Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

Nightly News with Lester Holt: The Latest News Stories Every Night - NBC News
<https://www.nbcnews.com/nightly-news>
Coverage of the latest global and U.S. breaking news stories by Lester Holt on NBCNews.com. Watch videos of breaking news, politics, health, lifestyle and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c61bdc8e22de07759ee77db0f7627905.html

Dateline: In-Depth Investigations of News Stories with Lester Holt - NBC News
<https://www.nbcnews.com/dateline>
Follow Lester Holt as he uncovers and investigates the latest news events on NBCNews.com. Find coverage on murder convictions, missing people, and more
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/5ce5a465bee4d1f6baeba7bda5edb07.html

Happier, Healthier, Smarter, BETTER: Life tips | NBC News
<https://www.nbcnews.com/better>
Transform your life with easy tips for health, wellness finance and more from NBCNews BETTER.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/50a4fc4e642feda57c5d668361bb645.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b93835aab8770aa4a973.html

NBC Left Field Video Journalism | NBC News
<https://www.nbcnews.com/leftfield>
Creative video that drops you into the minds and bodies of others.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/ff129bd5d9fe133519b39358657f57c5.html

THINK: Fresh Opinions, Sharp Analyses and Powerful Essays | NBC News
<https://www.nbcnews.com/think>
THINK is NBC News' home for op-eds, in-depth analyses and essays about news and current events. Find opinions that will make you think differently and deeply about the world and our place in it.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9c6c23e46da1e24c7a9186ac87738aa9.html

U.S. News: Breaking News Photos, & Videos on the United States - NBC News
<https://www.nbcnews.com/news/us-news>
Find the latest U.S. news stories, photos, and videos on NBCNews.com. Read breaking headlines covering politics, economics, pop culture, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/97c038b2ce9ebc048fa7e31911b73f94.html

NBCBLK: Black Community News, Information, Culture & More - NBC News
<https://www.nbcnews.com/news/nbcblk>
Find the latest news articles, photos, and videos covering stories, issues, and opinions of the Black community on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2895cf0a25d3e40ed5513551fca34fee.html

Figure 25. Networkx Algorithm - Austin Bombings.

(8). Query – Paris Climate Deal

Search: Paris Climate Deal Lucene NetworkX Submit

Results 1 - 10 of 4465:

Trump Declines Endorsing Paris Climate Change Deal at G7 Summit, Will Make Decision Next Week - NBC News
<https://www.nbcnews.com/storyline/trump-s-first-foreign-trip/trump-declines-endorsing-paris-climate-change-deal-g7-summit-will-n765406>
President Trump on Saturday refused to endorse a global climate change accord during the summit with international leaders, saying he needed more time.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a800f7a0973c26e0eb812a8a342c7356.html

Trump Declines Endorsing Paris Climate Change Deal at G7 Summit, Will Make Decision Next Week - NBC News
<https://www.nbcnews.com/storyline/trump-s-first-foreign-trip/trump-declines-endorsing-paris-climate-change-deal-g7-summit-will-n765406>
President Trump on Saturday refused to endorse a global climate change accord during the summit with international leaders, saying he needed more time.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a511f3382446872524a279c49352ce6.html

Trump Pulls U.S. Out of Paris Climate Agreement
<https://www.nbcnews.com/politics/white-house/trump-pulls-u-s-out-paris-climate-agreement-n767066>
President Donald Trump pulled the U.S. out of the Paris Climate Agreement Thursday, a global accord on reducing harmful emissions.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/79020014ebc779b2c332c30776e34746.html

What It Means That Trump Is Leaving the Paris Climate Agreement
<https://www.nbcnews.com/politics/white-house/heres-s-what-happens-if-trump-leaves-paris-climate-agreement-n766761>
Details about the international effort and future of the environment now that President Trump withdrew the U.S. from the Paris Agreement on climate change.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/fc8e2c9b39596ffa7502522d0ac87b8b.html

Forget Trump. The U.S. Storms Ahead on Climate Change Like Never Before
<https://www.nbcnews.com/politics/politics-news/forget-trump-u-s-storms-ahead-climate-change-never-n801826>
Over the past year, hundreds of non-federal entities have enacted a downpour of measures aimed at curbing carbon emissions in their own jurisdictions.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/3bc42fc74ca4d8b635ee58b63ea2650d.html

Meet the Press - June 4, 2017 - NBC News
<https://www.nbcnews.com/meet-the-press/meet-press-june-4-2017-n768046>
Fmr. Sec. of State John Kerry, EPA Administrator Scott Pruitt, Fmr. Vice President Al Gore, Michael Gerson, Stephanie Cutter, Heather McGhee and Hugh Hewitt
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/487d1f4aa6d2e9b229350abb6d3f5f04.html

Trump's 'America First' policy has isolated U.S. from world leaders - NBC News
<https://www.nbcnews.com/news/world/analysis-trump-s-america-first-foreign-policy-isolates-u-s-n833046>
Donald Trump's vision for U.S. foreign policy is crystal clear and summed up in two words: "America First."
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/76096c0b2b96033aed746d39edfc006.html

Trump at the End of First Foreign Trip Pledges 'Unwavering Support' of U.S. Military - NBC News
<https://www.nbcnews.com/storyline/trump-s-first-foreign-trip/trump-end-first-foreign-trip-pledges-unwavering-support-u-s-n765446>
The president was joined by first lady Melania Trump in a pre-Memorial Day visit to Naval Air Station Sigonella outside of Sicily.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/8c5bdc618bf3ddd4af9029520a76f047.html

G-7 Summit: Leaders Brace for Clash With Trump on Trade, Climate - NBC News
<https://www.nbcnews.com/storyline/trump-s-first-foreign-trip/g-7-summit-leaders-brace-clash-trump-trade-climate-n764971>
World leaders braced for contentious talks Friday with President Donald Trump at the G-7 summit after he earlier lambasted allies at NATO.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/e8fe48469b86f956bdebde2b1aeb91c.html

Trump at the End of First Foreign Trip Pledges 'Unwavering Support' of U.S. Military - NBC News
<https://www.nbcnews.com/storyline/trump-s-first-foreign-trip/trump-end-first-foreign-trip-pledges-unwavering-support-u-s-n765446>
The president was joined by first lady Melania Trump in a pre-Memorial Day visit to Naval Air Station Sigonella outside of Sicily.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/2d7be4a009d793b0c289b304a40a4428.html

Figure 26. Lucene Algorithm – Paris Climate Deal.

Search: Paris Climate Deal Lucene NetworkX Submit

Results 1 - 10 of 4465:

NBC News – Breaking News & Top Stories - Latest World, US & Local News
<https://www.nbcnews.com/>
Go to NBCNews.com for breaking news, videos, and the latest top stories in world news, business, politics, health and pop culture.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/77b86639d1384ac68141803ec5db27c0.html

Meet the Press: Inside Takes on the Latest Stories with Chuck Todd - NBC News
<https://www.nbcnews.com/meet-the-press>
Follow Chuck Todd as he uncovers breaking news events with the experts on NBCNews.com. Find coverage on the latest in politics, news, business, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/4c6cbf47c24dc4b2a063c2586d7ea4f3.html

Dateline: In-Depth Investigations of News Stories with Lester Holt - NBC News
<https://www.nbcnews.com/dateline>
Follow Lester Holt as he uncovers and investigates the latest news events on NBCNews.com. Find coverage on murder convictions, missing people, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/5ce5a465bee4d1f6faeba7bda5edb07.html

MACH: The best and latest in Tech & Innovation | NBC News
<https://www.nbcnews.com/mach>
MACH asks big questions and celebrates big ideas. It champions science & innovation, challenges technology, and explores our universe.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/582a22b26788b93835aab8770aa4a973.html

Health News: Disease, Nutrition, Healthcare & More - NBC News
<https://www.nbcnews.com/health>
Find the latest news on food & diet, healthcare and healthy living on NBCNews.com. Read headlines and watch videos on medicine, mental illness, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/526e34baa0856a7074d1d43105adb2d1.html

Investigations: U.S. & World News Investigations - NBC News
<https://www.nbcnews.com/investigations>
Find the latest reporting on U.S. and world investigations. View articles, photos and videos covering criminal justice and exposing corruption, scandal and more on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/87e17622127da53e54c1d30ed8698d0c.html

Science: Space, Environment & Trends - NBC News
<https://www.nbcnews.com/science>
Find the latest science news articles, photos and videos covering space, the environment, human development and more on NBCNews.com.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/1713bf741b955c27529ab0fea655a1a7.html

Weather: News, Photos & Videos on Natural Disasters, Severe Weather & More - NBC News
<https://www.nbcnews.com/news/weather>
Find the latest weather stories, photos, and videos on NBCNews.com. Read headlines covering natural disasters, answers to common questions, severe conditions, and more.
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/7f6393dd233808b6c56ae77732972742.html

Video - NBC News
<https://www.nbcnews.com/video>
Video
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/98fb56caf81c4f46fea84bd8a9a35b7f.html

Bill Cosby Scandal - NBC News
<https://www.nbcnews.com/storyline/bill-cosby-scandal>
Continuing coverage of sexual assault allegations against the legendary comedian
/Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/a47abc5e5367386ac4312ce1ced59a0.html

Figure 27. Networkx Algorithm - Paris Climate Deal.

2. Why some pages have higher PageRank values than others.

- (1). PageRank is mainly based on how many external links point to the webpage to be calculated. So, we build the edgeList.txt to draw the graph of the web pages. The more external links point to the web page, the more important the web page is.
- (2). Lucene scores using a combination of TF-IDF and vector closeness to calculate each web page's score. While the Networkx focus on the number of external links that point to that web page to calculate the PageRank score. So, the big difference in the result when compare these two PageRank algorithms.
- (3). In all, each web page contains a different number of external links that point to this page, so that each page has a different score.

3. The graph of overlap for the results of two algorithms.

Table of top 10 urls, if og_url doesn't exist, the url comes from UrlToHtml_NBCNews.csv

(1). Query – Bitcoin Blockchain

Query	Lucene	NetworkX	overlap
Bitcoin Blockchain Top 10 URLs	https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036	https://www.nbcnews.com/	0
	https://www.nbcnews.com/tech/innovation/bitcoin-pays-entire-wedding-its-price-soars-past-16-000-n826776	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/better/business/what-bitcoin-should-you-invest-it-ncna844106	https://www.nbcnews.com/business	
	https://www.nbcnews.com/business/economy/middle-america-crazy-love-bitcoin-n789011	https://www.nbcnews.com/tech	
	https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036	https://www.nbcnews.com/science	
	https://www.nbcnews.com/business/business-news/hidden-dangers-buying-virtual-currency-go-beyond-simple-hack-n852706	https://www.nbcnews.com/mach/video/this-futuristic-jet-pack-that-lets-users-fly-up-to-10-000-feet-in-the-sky-1189436995946	
	https://www.nbcnews.com/tech/innovation/bitcoin-pays-entire-wedding-its-price-soars-past-16-000-n826776	https://www.nbcnews.com/mach/video/why-youtube-s-algorithm-booster-conspiracy-theory-videos-in-the-wake-of-the-parkland-shooting-1187660355671	
	https://www.nbcnews.com/business/economy/middle-america-crazy-love-bitcoin-n789011	https://www.nbcnews.com/mach/video/from-space-dream-to-space-junk-the-vanguard-1-satellite-completes-60-years-in-space-today-118094531644	
	https://www.nbcnews.com/better/business/what-bitcoin-should-you-invest-it-ncna844106	https://www.nbcnews.com/mach/video/pi-in-the-sky-how-a-nasa-scientist-uses-pi-to-look-for-life-beyond-earth-1185847363995	
	https://www.nbcnews.com/business/business-news/hidden-dangers-buying-virtual-currency-go-beyond-simple-hack-n852706	https://www.nbcnews.com/mach/video/astronaut-scott-kelly-s-genes-show-long-term-changes-after-a-year-in-space-1186826819794	

Figure 28. Top 10 urls - Bitcoin Blockchain

(2). Query – Stephen Hawking

Query	Lucene	NetworkX	overlap
Stephen Hawking Top 10 URLs	https://www.nbcnews.com/mach/science/brief-history-stephen-hawking-cambridge-cultural-icon-ncs1856456	https://www.nbcnews.com/	0
	https://www.nbcnews.com/news/world/british-physicist-stephen-hawking-among-world-s-greatest-minds-science-n702301	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/think/opinion/stephen-hawking-s-life-was-made-possible-access-great-health-ncna856971	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/science/space/-m-atheist-stephen-hawking-god-space-travel-n210076	https://www.nbcnews.com/think/video/c210076	
	https://www.nbcnews.com/news/world/british-physicist-stephen-hawking-among-world-s-greatest-minds-science-n702301	https://www.nbcnews.com/health	
	https://www.nbcnews.com/science/stephen-hawking-says-humans-must-leave-earth-within-600-years-ncna818926	https://www.nbcnews.com/news/us-news	
	http://www.nbcnews.com/science/science-news/five-years-after-zero-g-flight-stephen-hawking-still-space-fc63703084	https://www.nbcnews.com/science/video	
	https://www.nbcnews.com/mach/science/what-stephen-hawking-taught-us-about-black-holes-ncna857471	https://www.nbcnews.com/video	
	https://www.nbcnews.com/mach/science/stephen-hawking-says-humans-must-leave-earth-within-600-years-ncna818926	https://www.nbcnews.com/news	

Figure 29. Top 10 urls - Stephen Hawking

(3). Query – Falcon Heavy

Query	Lucene	NetworkX	overlap
Falcon Heavy Top 10 URLs	https://www.nbcnews.com/mach/science/spacex-s-falcon-heavy-launch-gives-big-boost-elon-musk-ncna845256	https://www.nbcnews.com/	0
	https://www.nbcnews.com/mach/science/watch-spacex-s-falcon-heavy-rocket-make-its-maiden-flight-ncna845096	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/mach/science/watch-spacex-s-falcon-heavy-rocket-make-its-maiden-flight-ncna845096	https://www.nbcnews.com/nightly-news	
	https://www.nbcnews.com/mach/science/spacex-s-falcon-heavy-launch-gives-big-boost-elon-musk-ncna845256	https://www.nbcnews.com/world	
	https://www.nbcnews.com/mach/science/spacex-s-falcon-feat-may-be-just-prelude-main-event-ncna846446	https://www.nbcnews.com/latino	
	https://www.nbcnews.com/mach/science/heres-what-will-happen-tesla-spacex-hot-space-ncna845566	https://www.nbcnews.com/science	
	https://www.nbcnews.com/mach/science/month-space-pictures-cosmic-penguin-playing-mars-ncs1852081	https://www.nbcnews.com/news/weather	
	https://www.nbcnews.com/mach/science/spaces-falcon-feat-may-be-just-prelude-main-event-ncna846446	https://www.nbcnews.com/news/photo	
	https://www.nbcnews.com/mach/science/watch-spacex-aims-bring-high-speed-internet-whole-world-ncna853766	https://www.nbcnews.com/video	
		https://www.nbcnews.com/news	

Figure 30. Top 10 urls - Falcon Heavy

(4). Query – Syrian War

Query	Lucene	NetworkX	overlap
Syrian War Top 10 URLs	https://www.nbcnews.com/storyline/syrias-children	https://www.nbcnews.com/	0
	https://www.nbcnews.com/storyline/syrias-children/syrian-civil-war-photo-photographer-s-rescue-goes-viral-n7483146	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/storyline/aleppo-children	https://www.nbcnews.com/nightly-news	
	https://www.nbcnews.com/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851	https://www.nbcnews.com/politics	
	http://www.nbcnews.com/news/other/barrel-bombs-just-another-symbol-brutality-syrian-civil-war-f2d11765640	https://www.nbcnews.com/think	
	https://www.nbcnews.com/slideshow/children-among-injured-besieged-damascus-suburb-n834526	https://www.nbcnews.com/feature/nbc-out	
	https://www.nbcnews.com/slideshow/children-among-injured-besieged-damascus-suburb-n834526	https://www.nbcnews.com/business	
	https://www.nbcnews.com/storyline/syrias-suffering-families	https://www.nbcnews.com/news/world	
	https://www.nbcnews.com/news/mideast/syria-s-civil-war-has-been-raging-7-years-what-n849851	https://www.nbcnews.com/news/asian-america	

Figure 31. Top 10 urls - Syrian War

(5). Query – LA Rams

Query	Lucene	NetworkX	overlap
LA Rams Top 10 URLs	https://www.nbcnews.com/news/sports/how/history/informs/colin-kaepernick/s-national-anthem/protest-n639366	https://www.nbcnews.com/	0
	https://www.nbcnews.com/news/sports/how/history/informs/colin-kaepernick/s-national-anthem/protest-n639366	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/news/sports/broadcasting/legend/dick-enberg/dies-82-n832076	https://www.nbcnews.com/news/nbcblk	
	https://www.nbcnews.com/siteshow/black-quarterbacks/who/ve-played/super-bowl-n513226	https://www.nbcnews.com/news/latino	
	https://www.nbcnews.com/pop-culture/music/bernie-casey/pro-football/player-turned/fan/favorite/actor/dies-n803291	https://www.nbcnews.com/news/us-news/nbc-affiliates-n19981	
	https://www.nbcnews.com/pop-culture/music/bernie-casey/pro-football/player-turned/fan/favorite/actor/dies-n803291	https://www.nbcnews.com/news	
	https://www.nbcnews.com/meet-the-press/meet-press-transcript-october-11-2015-n442476	https://www.nbcnews.com/better/video/how/mika-brzezinski-found/her/value/and/got/paid/what/she/s/worth-1189457987619	
	https://www.nbcnews.com/meet-the-press/meet-press-transcript-october-11-2015-n442476	https://www.nbcnews.com/better/video/how/not/to/choke/in/sports/and/other/pressure/charged/situations-1186761795616	
	https://www.nbcnews.com/politics/2016-election/ia	https://www.nbcnews.com/better/video/how/lose/weight/and/why/it/s-so-hard-1187543619775	

Figure 32. Top 10 urls - LA Rams

(6). Query – Black Panther

Query	Lucene	NetworkX	overlap
Black Panther Top 10 URLs	https://www.nbcnews.com/news/nbcblk/black-panther/s-wakanda/sheds/light/black/excellence-n844801	https://www.nbcnews.com/	0
	https://www.nbcnews.com/news/nbcblk/black-panther/sets/fandango/record/top/pre/selling/marvel/movie-n836631	https://www.nbcnews.com/nightly-news	
	https://www.nbcnews.com/news/nbcblk/black-panther/novelist/journalism/sci-fi/bring-hidden/light-n848011	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/tech/internet/plot/destroy/black-panther/ratings/thwarted/facebook-n84426	https://www.nbcnews.com/think	
	https://www.nbcnews.com/pop-culture/movies/black-panther/blows/away/box-office-192-million/weekend-n849246	https://www.nbcnews.com/health	
	https://www.nbcnews.com/news/nbcblk/black-panther/comic/creators/spent/years/breaking/down/barriers-n848461	https://www.nbcnews.com/feature/nbc-out	
	https://www.nbcnews.com/news/nbcblk/black-panther/actress/janeshia-adams/ginyard/talks/living/stuntwoman/life-n847646	https://www.nbcnews.com/pop-culture	
	https://www.nbcnews.com/think/opinion/defeat/kilmonger/black-panther/holds/lessons/israel-ncna850831	https://www.nbcnews.com/news/asian-america	
	https://www.nbcnews.com/news/nbcblk/black-panther/novelist/journalism/sci-fi/bring-hidden/light-n848011	https://www.nbcnews.com/nbcblk	
	https://www.nbcnews.com/news/nbcblk/stars/black-panther/discuss/hope/marvel/film/impact-n847706	https://www.nbcnews.com/tech	

Figure 33. Top 10 urls - Black Panther

(7). Query – Austin Bombings

Query	Lucene	NetworkX	overlap
Austin Bombings Top 10 URLs	https://www.nbcnews.com/news/us-news/police/identify/teen/killed/austin/package/bombing/investigation/grows-n856371	https://www.nbcnews.com/	0
	https://www.nbcnews.com/news/us-news/deadly/austin/bombings/were/meant/send/message/police/chief/says-n857786	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/news/us-news/deadly/austin/bombings/were/meant/send/message/police/chief/says-n857786	https://www.nbcnews.com/nightly-news	
	https://www.nbcnews.com/widget/video-embed/1184733251954	https://www.nbcnews.com/datinge	
	https://www.nbcnews.com/news/us-news/police/identify/teen/killed/austin/package/bombing/investigation/grows-n856371	https://www.nbcnews.com/better	
	https://www.nbcnews.com/news/us-news/austin-texas-edge/after/spate/package/bombs/kill/two-n855956	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/news/us-news/austin-texas-edge/after/spate/package/bombs/kill/two-n855956	https://www.nbcnews.com/leffield	
	http://www.nbcnews.com/	https://www.nbcnews.com/think	
	https://www.nbcnews.com/news/latino/celia-cruz/be/remembered/grammy/lifetime/achievement/award-n516936	https://www.nbcnews.com/news/us-news	
	https://www.nbcnews.com/news/latino/california/affirmative/action/bill/sparks/fierce/debate-n87426	https://www.nbcnews.com/news/nbcblk	

Figure 34. Top 10 urls - Austin Bombings

(8). Query – Paris Climate Deal

Query	Lucene	NetworkX	overlap
Paris Climate Deal Top 10 URLs	https://www.nbcnews.com/storyline/trump/s/first/foreign/trip/trump/declines/endorsing/paris/climate/change/deal/47/summit/will-n765406	https://www.nbcnews.com/	0
	https://www.nbcnews.com/storyline/trump/s/first/foreign/trip/trump/declines/endorsing/paris/climate/change/deal/47/summit/will-n765406	https://www.nbcnews.com/meet-the-press	
	https://www.nbcnews.com/politics/white/house/trump/pulls/u/s/out/paris/climate/agreement-n767066	https://www.nbcnews.com/datinge	
	https://www.nbcnews.com/politics/white/house/here/s/what/happens/if/trump/leaves/paris/climate/agreement-n765761	https://www.nbcnews.com/mach	
	https://www.nbcnews.com/politics/news/forget/trump/u/s/storms/ahead/climate/change/never-n801826	https://www.nbcnews.com/health	
	https://www.nbcnews.com/meet-the-press/meet-press/june/4/2017-n768046	https://www.nbcnews.com/investigations	
	https://www.nbcnews.com/news/world/analysis/trump/s/america/first/foreign/policy/isolates/u/s-n833046	https://www.nbcnews.com/science	
	https://www.nbcnews.com/storyline/trump/s/first/foreign/trip/trump/end/first/foreign/trip/pledges/unwavering/support/u/s-n765446	https://www.nbcnews.com/news/weather	
	https://www.nbcnews.com/storyline/trump/s/first/foreign/trip/a/7/summit/leaders/brace/clash/trump/trade/climate-n764971	https://www.nbcnews.com/video	
	https://www.nbcnews.com/storyline/trump/s/first/foreign/trip/trump/end/first/foreign/trip/pledges/unwavering/support/u/s-n765446	https://www.nbcnews.com/storyline/bill-cosby-scandal	

Figure 35. Top 10 urls - Paris Climate Deal

Query	Overlap
Bitcoin Blockchain	0
Stephen Hawking	0
Falcon Heavy	0
Syrian War	0
LA Rams	0
Black Panther	0
Austin Bombings	0
Paris Climate Deal	0

Figure 36. The table of overlap based on “id”.

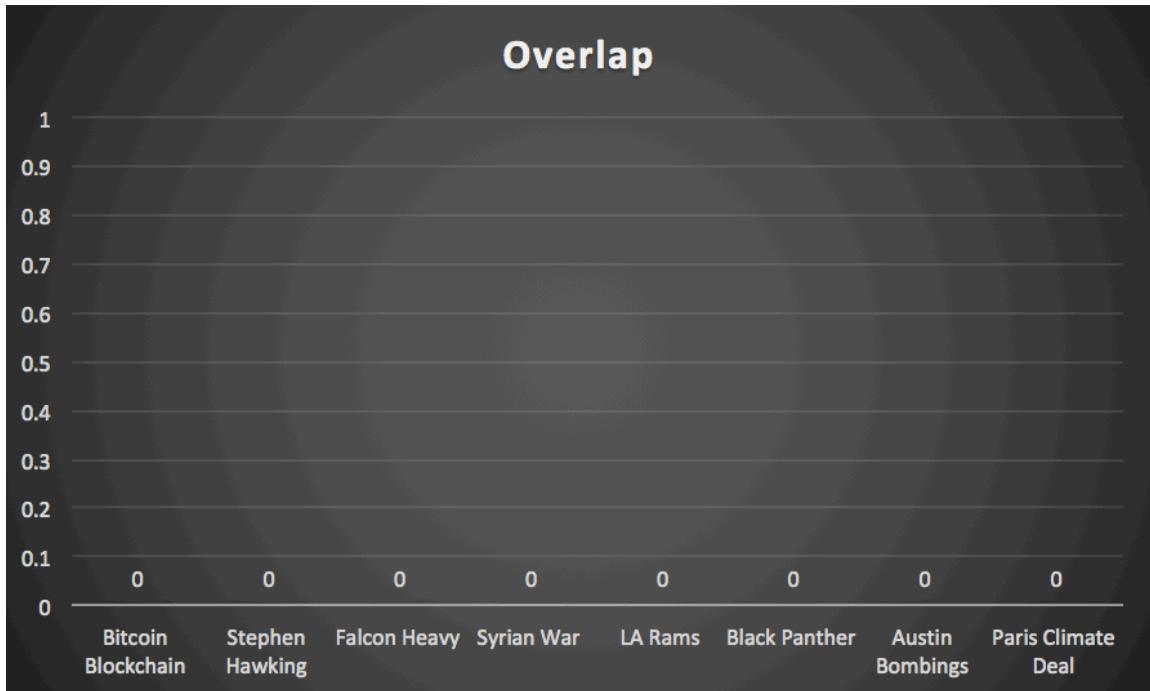


Figure 37. The graph of overlap.

4. View for clickable real webpages.

localhost/index.php?q=Bitcoin+Blockchain&rankAlgorithm=lucene

Search: Bitcoin Blockchain Lucene NetworkX Submit

Results 1 - 10 of 617:

- How Bitcoin and other cryptocurrencies could kill off cash <https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036> National governments are also looking into creating virtual currencies of their own. /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/27640bb3f3bb0345f023330f021248e0.html
- Bitcoin pays for entire wedding as its price soars past \$16,000 <https://www.nbcnews.com/tech/innovation/bitcoin-pays-entire-wedding-its-price-soars-past-16-000-n826776> With bitcoin hitting a record high of over \$16,000, one wedding in Indiana just got bigger. /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/c346a4bb29558ea93d980d10cc15b5db.html
- What is Bitcoin? And should you invest in it? <https://www.nbcnews.com/better/business/what-bitcoin-should-you-invest-it-ncna844106> Only 24 percent of Americans are familiar with Bitcoin. Here's what you need to know about this "cryptocurrency." /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/9ba27c9494397c038fe869ccb1e76a27.html
- Middle America Is Crazy in Love With Bitcoin <https://www.nbcnews.com/business/economy/middle-america-crazy-love-bitcoin-n789011> In May, there were more searches for Bitcoin than Beyoncé. Cryptocurrencies are going mainstream as the middle class wants in on the "Wild West" action. /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/b4f26bcd9d8731708d5e1972ccf26fd.html
- How Bitcoin and other cryptocurrencies could kill off cash <https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036> National governments are also looking into creating virtual currencies of their own. /Users/qixiongliu/Desktop/Graduate/CSCI572/HW/HW4/DataSet/NBC_News/crawl_data/bd4b5429a95df351b03e78a7296fb9c3.html

Secure | https://www.nbcnews.com/mach/science/how-bitcoin-other-cryptocurrencies-could-kill-cash-ncna857036

MACH

TECHNOLOGY

How Bitcoin and other cryptocurrencies could kill off cash

National governments are also looking into creating virtual currencies of their own.

by David Cox / Mar. 16, 2018 / 8:50 AM ET

Figure 38. Real webpage.